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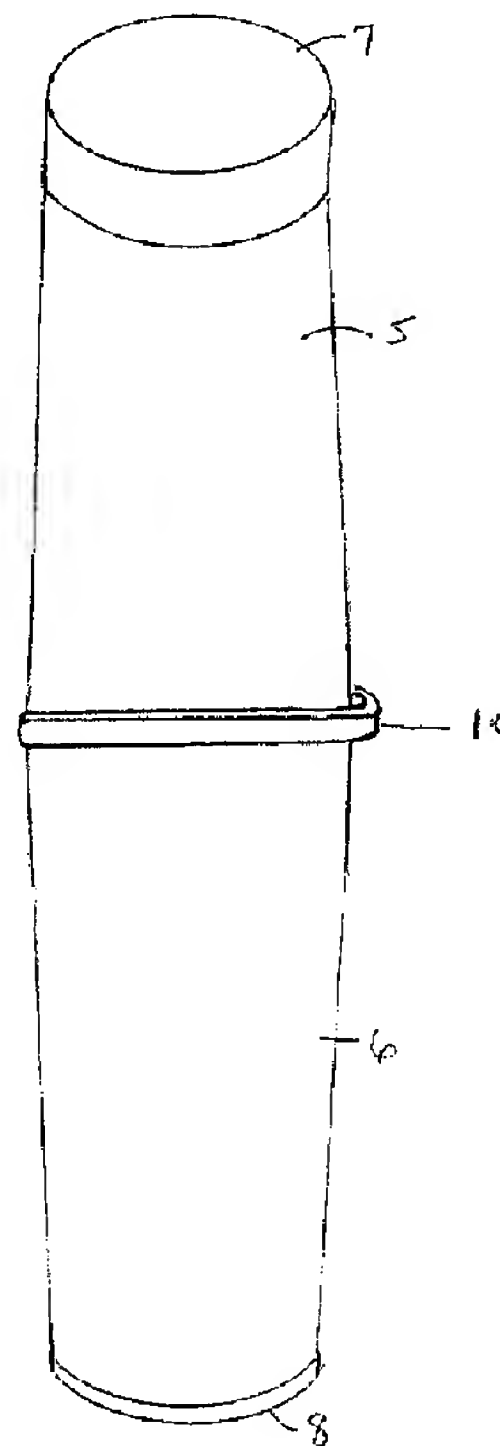
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(54) Titre : CONTENEUR A STOCKAGE ET A MELANGE

(54) Title: STORING AND MIXING CONTAINER



(57) **Abrégé/Abstract:**

A bendable tubular standup or V-shaped container for storing and mixing two compositions which must be kept separate until being mixed together at or near the time of use. The container comprising semi rigid tubular walls, a cap or nozzle at one end through which the contents of the container are emptied defined as the top portion, and a cap seal at the other end, defined as the bottom portion. A reopenable seal is situated within the interior walls of the container dividing the top portion and the bottom portion of the container into two separate compartments. The interior reopenable seal can be reinforced by attaching an exterior wall clamp to the standup container or the container may be bent into a V-shape position. Two compositions can be deposited into the separate compartments and later mixed together by either unbending and squeezing the V-shaped container or by removing the exterior wall clamp and squeezing the standup container, thereby causing the reopenable seal to open and the contents to interact.



ABSTRACT

A bendable tubular standup or V-shaped container for storing and mixing two compositions which must be kept separate until being mixed together at or near the time of use. The container comprising semi rigid tubular walls, a cap or nozzle at one end through which the contents of the container are emptied defined as the top portion, and a cap seal at the other end, defined as the bottom portion. A reopenable seal is situated within the interior walls of the container dividing the top portion and the bottom portion of the container into two separate compartments. The interior reopenable seal can be reinforced by attaching an exterior wall clamp to the standup container or the container may be bent into a V-shape position.

Two compositions can be deposited into the separate compartments and later mixed together by either unbending and squeezing the V-shaped container or by removing the exterior wall clamp and squeezing the standup container, thereby causing the reopenable seal to open and the contents to interact.

STORING AND MIXING CONTAINER

Technical Field

This invention relates to containers for substances and more particularly
5 to containers for storing two substances which must be stored separately but should be
mixed shortly before use.

Background

There are many compositions in industries such as the cosmetic,
10 pharmaceutical, chemical and beverage industries that require two substances to be
stored separately but should be mixed shortly before use. As an example, the cosmetic
industry manufactures and packages hair colour in one container and developer lotion in
a second container. The consumer must follow a 5 step procedure by 1) removing the
lid from the partly filled developer container; 2) removing the lid from the hair colour
15 container; 3) depositing the hair colour into the partly filled developer container; 4)
replacing the cap onto the developer container; and 5) shaking and mixing the contents
together in the developer container.

The current method, as described above, involves the use of two separate
containers, one for storing each substance. To mix the substances typically requires
20 pouring, depositing or injecting the first substance in the first container into the second
substance in the second container. This requires the second container to have sufficient
extra space to make room for the first substance. Alternatively, the contents of the first
and second containers are poured, deposited or injected into a third container. This
requires the additional expense and space of such third container.

25 There are known containers for separately storing substances to be mixed
before use. They tend to be expensive to manufacture, to be complex, involve more
than one step in order to separate and mix the fluids, or be prone to accidental mixing.
Some examples of such containers follow.

A two compartment container is disclosed in Canadian Patent No.

1,302,356 to Amos. The Amos container includes two compartments sealed by foil. Rotation of a intermediate part between the compartments cuts the foil on both compartments, causing the fluids contained therein to mix.

U.S. Patent No. 3,548,562 to Schwartzman discloses a method of
5 producing a mixing package employing two separate containers. The Schwartzman package includes first and second containers positioned vertically and separated by a frangible seal. By pushing downwardly on the second container, pointed ends pierce the seal and allow the fluids to mix.

Another example of a known double container with mixing means is
10 disclosed in U.S. Patent No. 3,696,919 to Miles. The Miles container comprises an inner container positioned within an outer container. The mouth of the inner container can be released from the stopper by applying compression to the double container. One disadvantage to this device is the potential for accidental mixing by inadvertent compression of the double container.

15 Other examples of devices for storing fluids separately and mixing the fluids before use are found in U.S. Patent No. 5,360,144 to Slade; U.S. Patent No. 5,380,087 to Haber et al.; U.S. Patent No. 5,240,322 to Haber et al. and U.S. Patent No. 4,073,406 to Goncalves.

20 Summary of Invention

A storing and mixing container according to the invention has application to many industries, including the cosmetic, pharmaceutical, beverage, chemical and industrial supplies industries. Such industries all presently manufacture substances which must be stored in two separate containers until being mixed together at
25 or near the time of use. The container according to the invention replaces the use of two separate containers with a single unit container that 1) stores the substances and allows for their mixing; 2) saves on packaging, materials, labour and shipping costs; 3) reduces the number of procedural steps required in mixing; and 4) offers cost effective, convenient, and easy to use apparatus and methods for the customer.

For example in the process described above for mixing hair colour and developer a container according to the invention offers the user an expedient and convenient "squeeze and shake" container that reduces the 5 step procedure to a 2 step procedure. The consumer unbends and squeezes the container causing the reopenable
5 seal to open and the ingredients to automatically mix together. The ingredients can be mixed more uniformly by shaking or squeezing the container.. The container according to the invention, besides the simplified and expedient squeeze and shake mixing method, also reduces material, labour and shipping costs.

The pharmaceutical industry manufactures compositions in liquid and
10 powder form that must be stored separately until being mixed together at the time of dispensing. Powder antibiotics are stored in one container, distilled water is stored in a second container and, at the time of dispensing, the ingredients are mixed together to produce a liquid oral antibiotic. The shelf life of liquid oral antibiotics (which must be refrigerated following activation) is 14 days. A container according to the invention
15 separately stores pre-measured powder antibiotics and distilled water in one double container unit. By simply squeezing and twisting the container, the antibiotics can be activated and the 14 day shelf life predetermined. The invention reduces materials and dispensing costs and is convenient for travellers.

In the health food industry, powder vitamins and herbs, powder protein
20 and powder or yogurt bacterial culture are packaged and stored separately and mixed with juices, soy milk, or other drinkable liquids at the time of consumption, thus eliminating the need for preservatives. A container according to the invention packages nutrition-rich protein, vitamin and yogurt beverages in a single "squeeze and shake" double container that preserves optimum nutritional value by separating the ingredients
25 until the time of consumption.

In the chemical industry, two part chemicals and catalysts are manufactured, contained and stored by the industrial suppliers in separate containers until they are mixed together at the time of use. A container according to the invention packages pre-measured chemicals and chemical catalysts in a single unit double

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container that stores and can be used to mix the compositions at the time of use.

In all of the above examples, time, labour, material and shipping costs can be saved by reducing the number of steps in the mixing process and the amount of materials to separate and later mix the two substances together.

5

Brief Description of Drawings

Fig. 1 is a perspective view of a standup container incorporating the invention;

Fig. 2 is a perspective view thereof; showing the reopenable interior seal;

Fig. 3 is a perspective view thereof wherein the interior seal is partly closed;

10 Fig. 4 is a perspective view thereof wherein the interior seal is closed;

Fig. 5 is a perspective view thereof showing the closure caps and the interior seal in a closed position;

Fig. 6 is a perspective side view thereof;

15 Fig. 7 is a perspective view of a container according to the invention, showing the exterior wall clamp;

Fig. 8 is a perspective view of a container according to the invention bent into a V-shape, showing a removeable cap connector;

Fig. 9 is a perspective view thereof, showing a compartment holder;

20 Fig. 10 is a perspective view of an applicator cap for use in a container according to the invention;

Fig. 11 is a perspective view of a drinking cap for use with a container according to the invention; and

Fig. 12 is a perspective view of a container according to the invention wherein the interior seal is open.

25

Description

A container embodying the invention, as best seen in Fig. 7, is a standup container 1 with caps 7 and 8 respectively, at each end and upper and lower compartments 5 and 6, respectively separated by a reopenable interior seal 4. The

reopenable interior seal 4 is reinforced by an exterior wall clamp 10. A container embodying the invention, as seen in Fig. 8, is a standup container 1 bent and held in a V-shape position by a cap connector 9, although a compartment holder 11 as illustrated in figure 9 is equally as effective.

5 The storing and mixing container, as best seen in figures 1 and 2, comprises a cylindrical container 1 with an opening 2 and 3, respectively, at each end.

As best seen in Figs. 2 through 4, the reopenable interior seal 4 is closed by a seal of the ziplock or otherwise reclosable variety as known in the industry.

As best seen in figures 2 through 6, the reopenable interior seal, when
10 closed, causes the container 1 to deform from a cylindrical shape to an hourglass shape with a top compartment 5 and a base compartment 6.

As best seen in figures 5 through 7, opening 2 of top compartment 5 is closed by a standard top cap 7 and opening 3 of base compartment 6 is closed by a standard base cap 8. Other types of caps are also satisfactory, including conical
15 applicator caps, as seen in Fig. 10, and drinking caps, as seen in Fig. 11. Caps of the screw-on, snap on, lock-on and heat sealed variety are equally as effective.

As best seen in Fig. 7, an exterior wall clamp 10 may be used to reinforce the sealability of the reopenable interior seal.

As best seen in Fig. 8, the standup container 1 can be bent into a V-shape
20 position, thereby applying pressure to and reinforcing the sealability of the reopenable interior seal 4. A removable cap connector 9 of the glue-on, snap-on or pull tab variety known to the industry connects the left (top) cap 7 and the right (base) cap 8 together and holds container 1 in a V-shape position with the left (top) compartment 5 and the right (base) compartment 6 held adjacent one another. A compartment holder 11 as best
25 seen in Fig. 9 is equally as effective and comprises two openings 12 that are secured below the left (top) cap 7 and the right (base) cap 8.

As best seen in Figs. 7 and 12, by removing the exterior wall clamp 10 and squeezing the container 1, the interior reopenable seal 4 is forced open and the container 1 returns to its original cylindrical shape causing the contents to interact.

Preferably, the user will shake the container 1 to facilitate the mixing of the contents.

As best seen in Figs. 8, 9 and 12, by removing the removeable cap connector 9 or the compartment holder 11 and unending the container 1 from its V-shaped position and by squeezing the container 1, the interior reopenable seal 4 is
5 opened, the container 1 returns to its natural cylindrical shape and the contents are mixed together. Preferably, the user will shake the container 1 to facilitate the mixing of the contents.

Some examples of use of the invention include:

1. Cosmetic Industry

10 Hair colour and developer are typically packaged in two separate containers. The user must open both containers, pour or squeeze the hair colour into the developer container and shake the contents at the time of use. The use of a container according to the invention offers the user an expedient "squeeze and shake" single unit product. The invention offers the manufacturer a simple, inexpensive one unit container that saves on
15 materials, labour and shipping costs.

2. Beverages

Powder vitamins and herbs, powder protein and yogurt or powder acidophilus and bifidus bacterial culture are ingredients that are packaged and stored separately but can be mixed with juices, soy milk, or other drinkable liquids at the time of
20 consumption. A container according to the invention offers the consumer nutrition-rich beverages in a single "squeeze and shake" container that preserves nutritional integrity by separating the ingredients until consumption.

3. Medical/Pharmaceutical

Pharmaceutical preparations in liquid and powder form are frequently stored
25 separately until being mixed together at the time of dispensing. A container according to the invention offers pre-measured storage of pharmaceutical preparations that must be kept separate until being mixed together at the time of dispensing.

4. Chemical – A container according to the invention allows storing and mixing of pre-measured chemicals and chemical catalysts.

As will be apparent to those skilled in the art in the light of the foregoing disclosure, many alterations and modifications are possible in the practice of this invention without departing from the spirit or scope thereof. Accordingly, the scope of the invention is to be construed in accordance with the substance defined by the
5 following claims.

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WHAT IS CLAIMED IS:

1. 1. A container for storing and mixing comprising:
 - an semi-rigid, tubular container;
 - an interior reopenable seal;
 - 5 an exterior wall clamp; and
 - two caps;wherein said container has a first and second opening at each end; said caps positionable at said ends to cover said openings.
- 10 2. The container of claim 1 wherein said container is bent into a V-shape.
3. A container for storing and mixing comprising:
 - a standup cylindrical container separated into an upper compartment and
 - a lower compartment, by an interior reopenable seal reinforced by an external wall
 - 15 clamp;wherein said seal is situated within said container and is openable by squeezing said container and applying pressure to said seal.
4. A container for storing and mixing comprising:
 - 20 a standup cylindrical container bent into a V-shape position, said cylindrical container comprising a left compartment and a right compartment separated by an interior reopenable seal.
5. The container of claim 4 further comprising a removable compartment holder
- 25 having two apertures positionable on said compartments to hold said compartments in a V-shape position.
6. The container of claim 4 further comprising caps on each of said compartments, said caps attached by a removeable cap connector such that said compartments are held

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in a V-shape.

7. The container of claim 1 wherein said container has a cylindrical shape.

5 8. The container of claim 1 wherein said container has an hourglass shape.

9. The container of claim 3 wherein said container has a V-shape.

10. The container of claim 4 wherein said container is made of a semi-rigid plastic
10 material

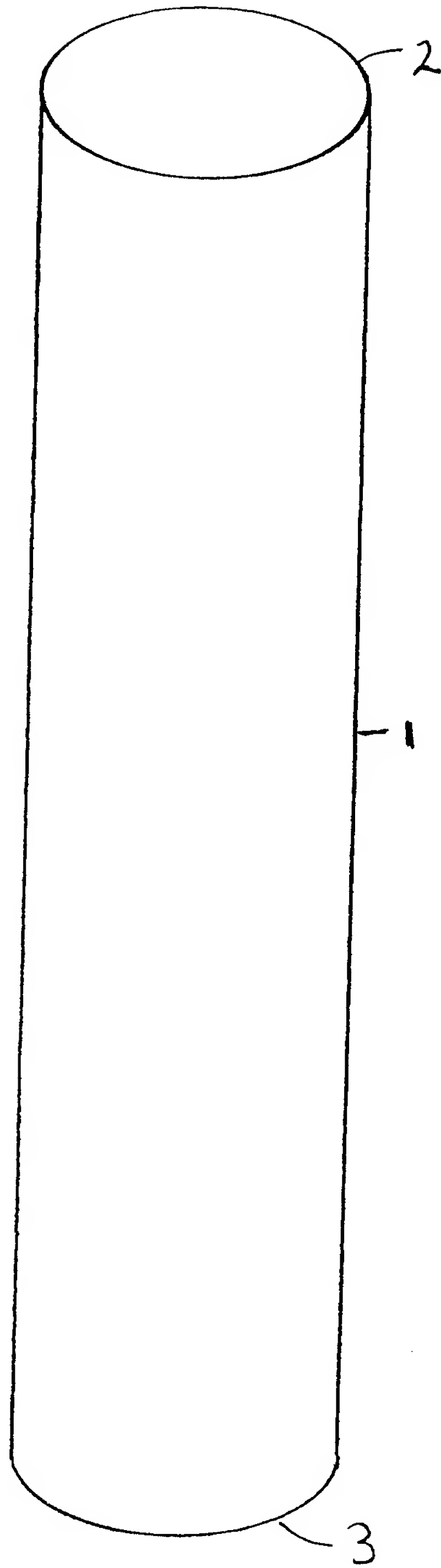


Fig. 1

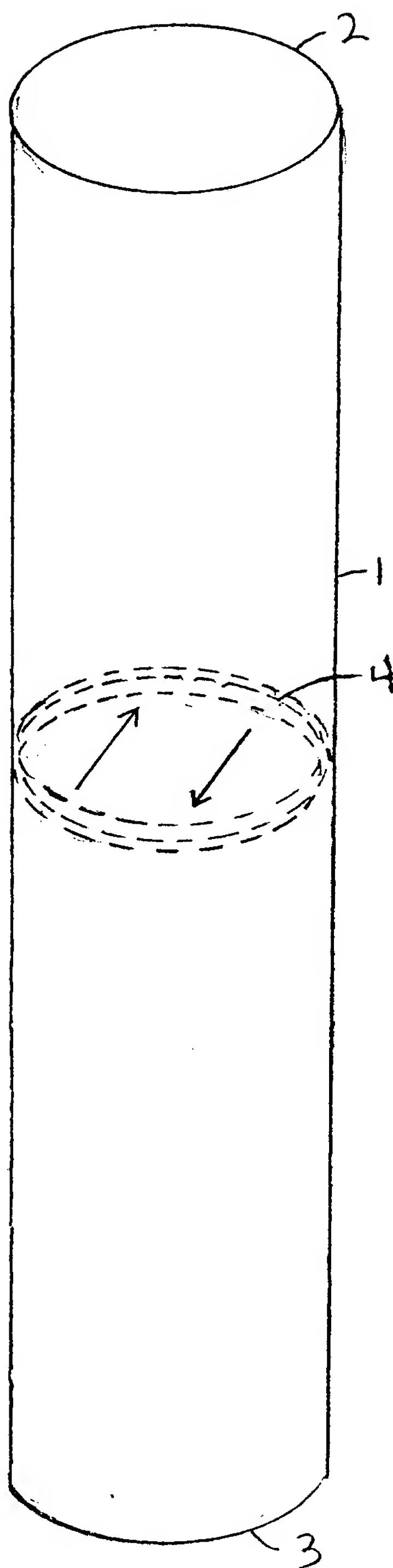


Fig. 2

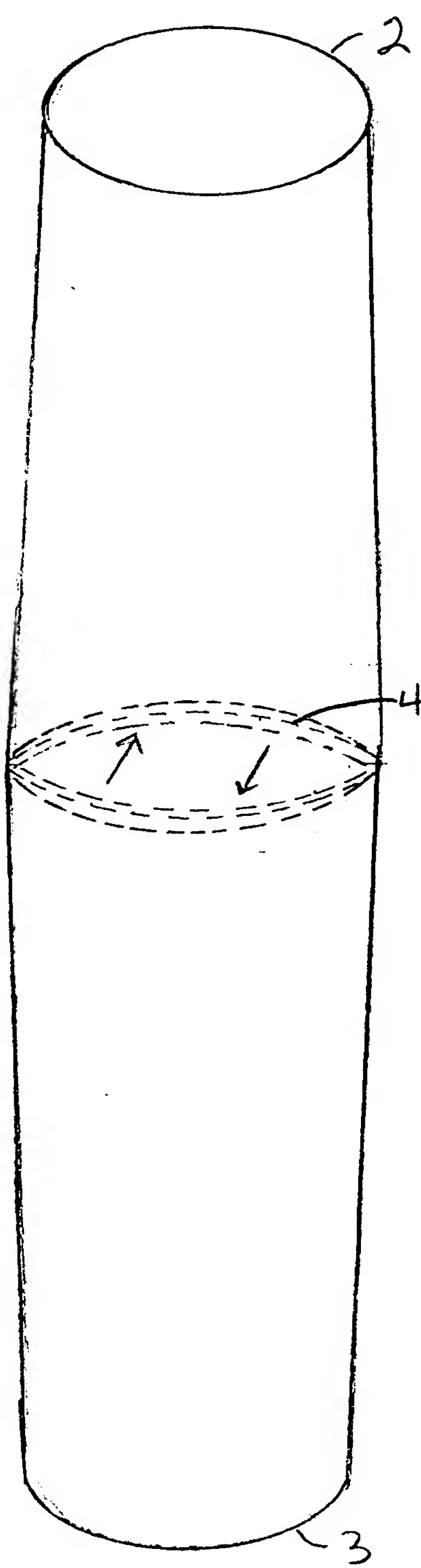


Fig. 3

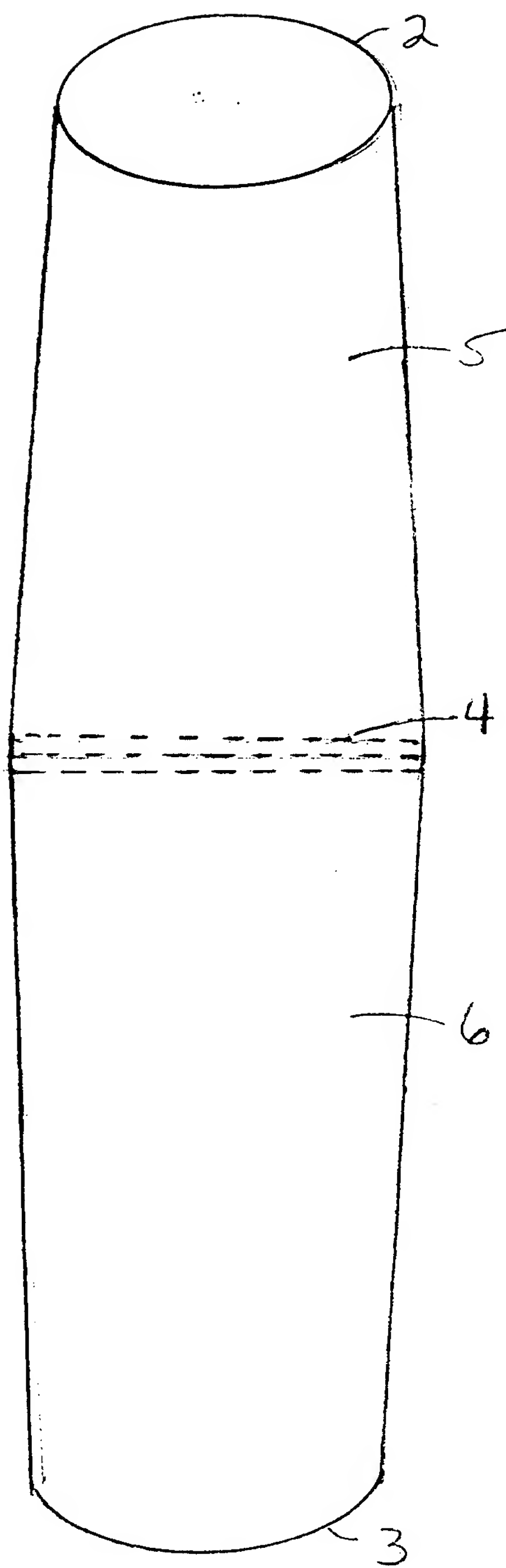


Fig. 4

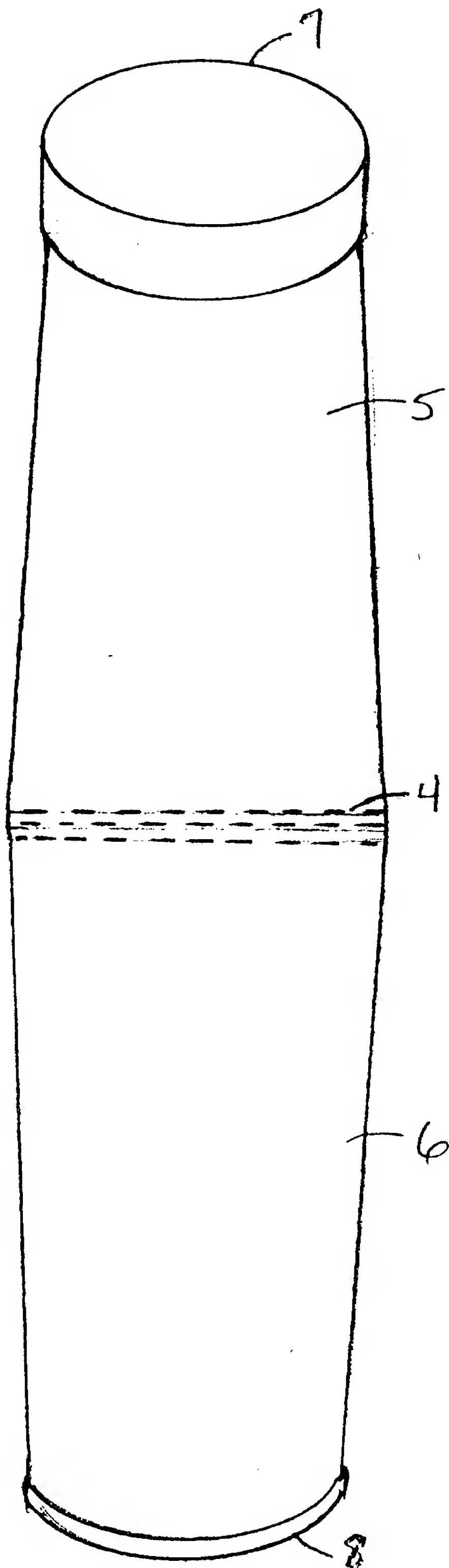


Fig. 5

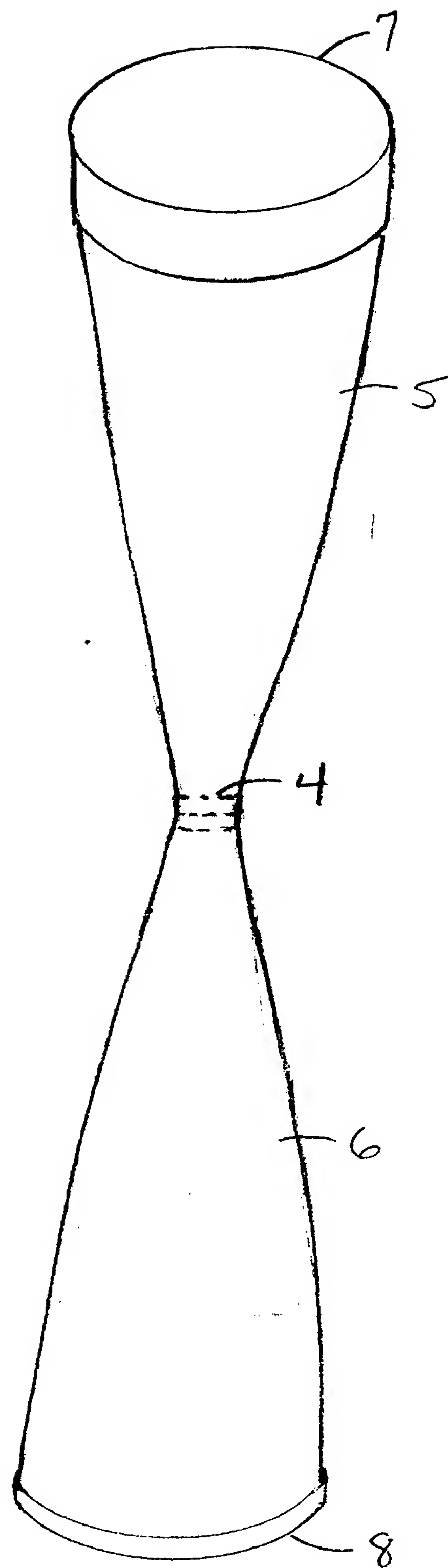


Fig. 6

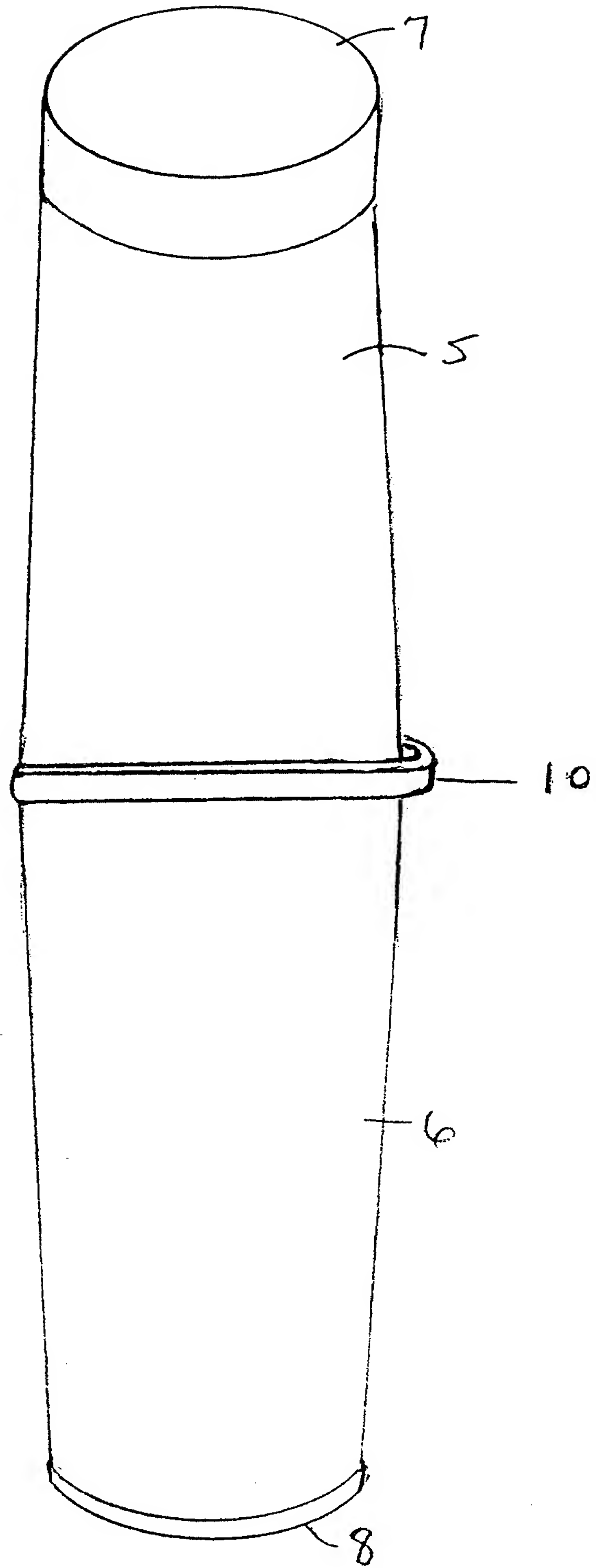


Fig. 7

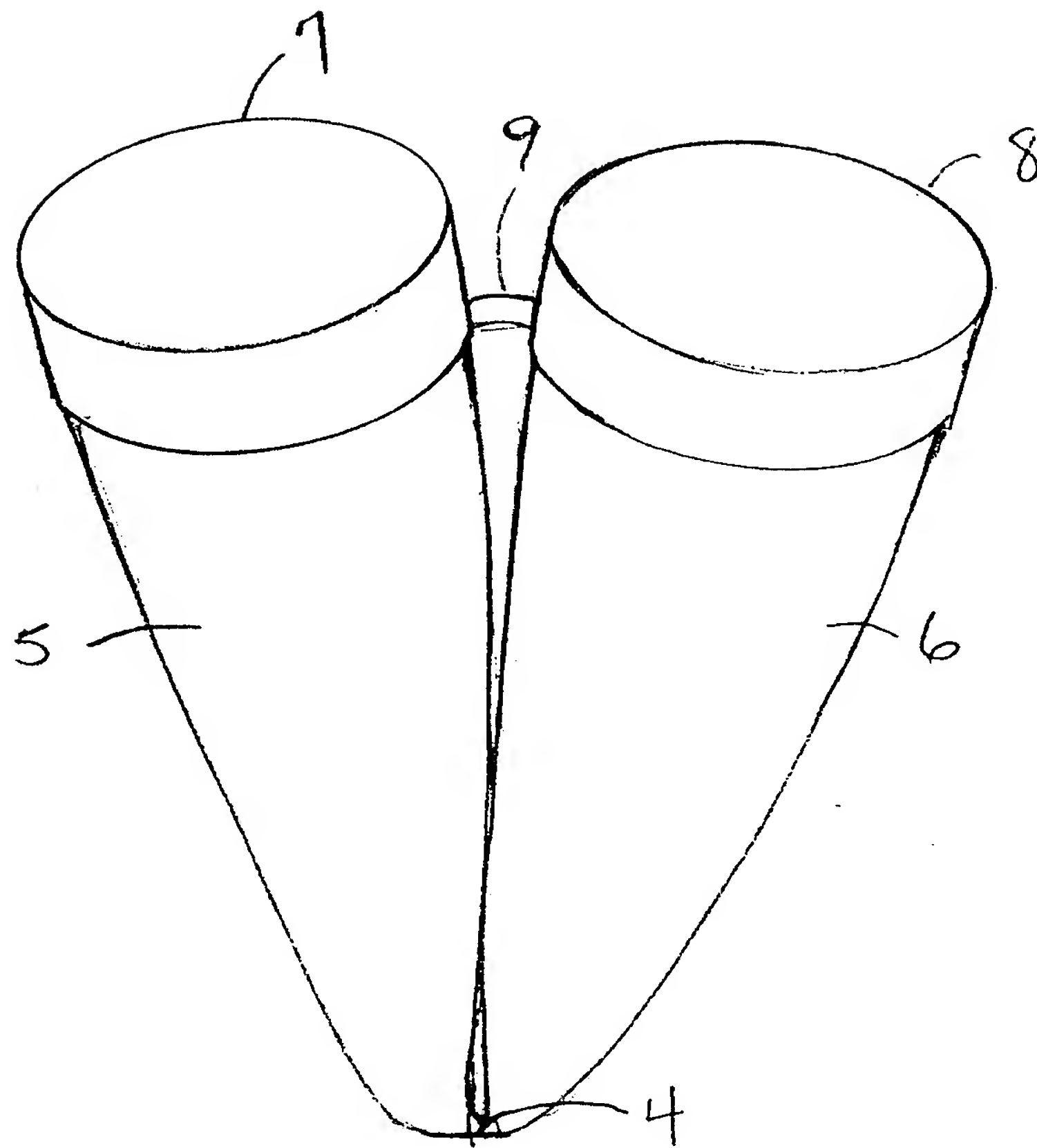


Fig. 8

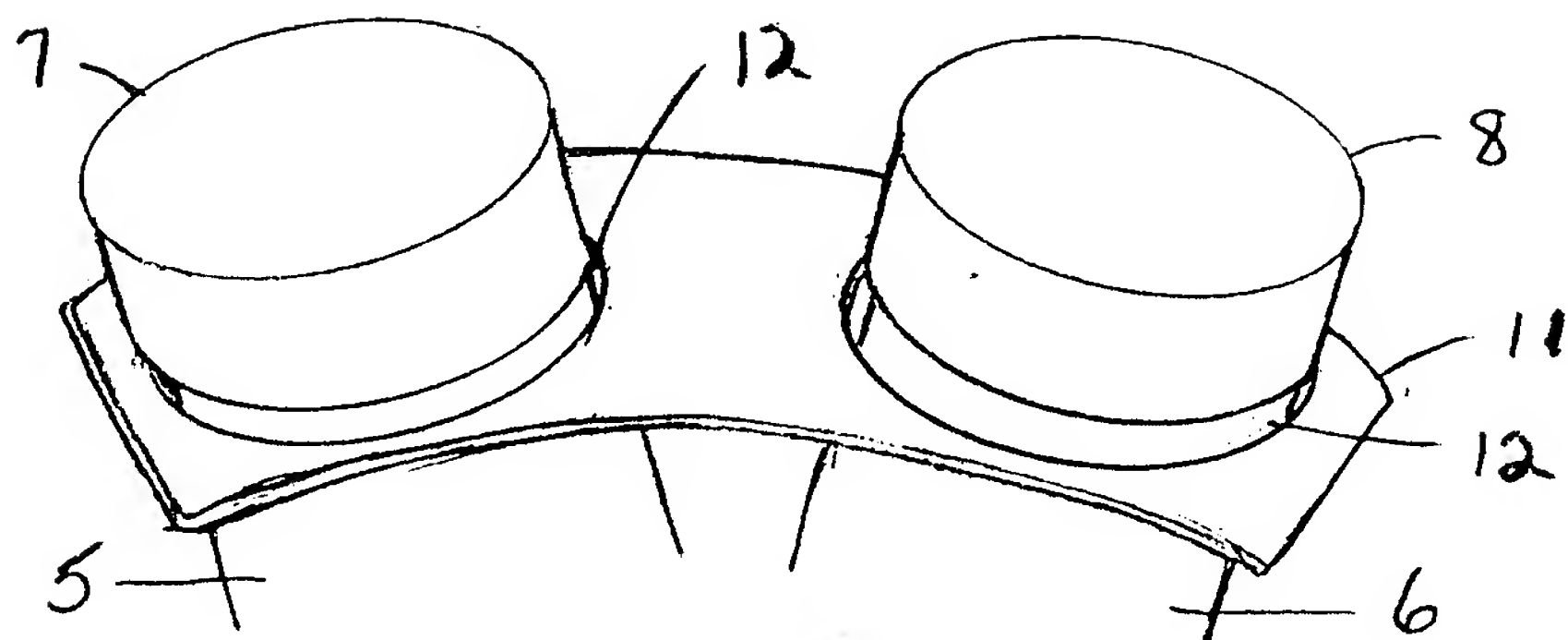


Fig. 9

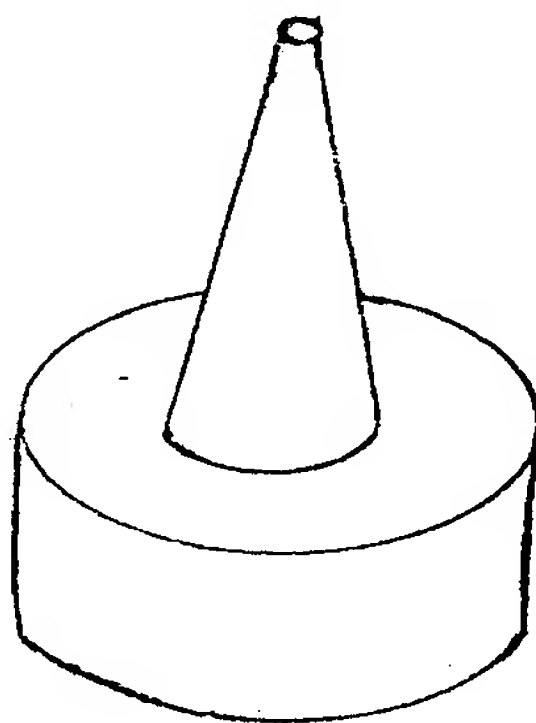


Fig. 10

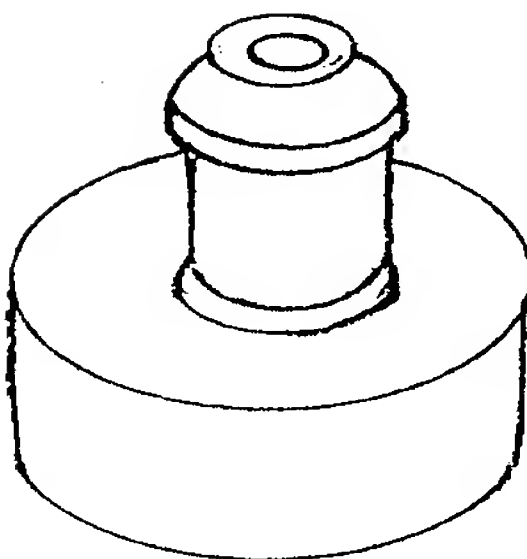


Fig. 11

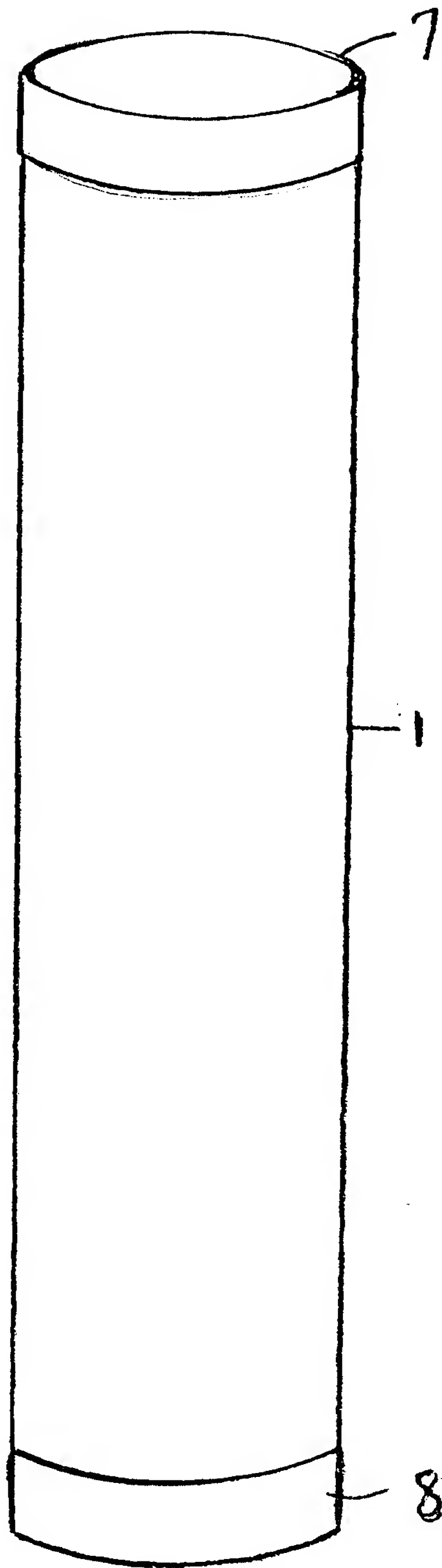
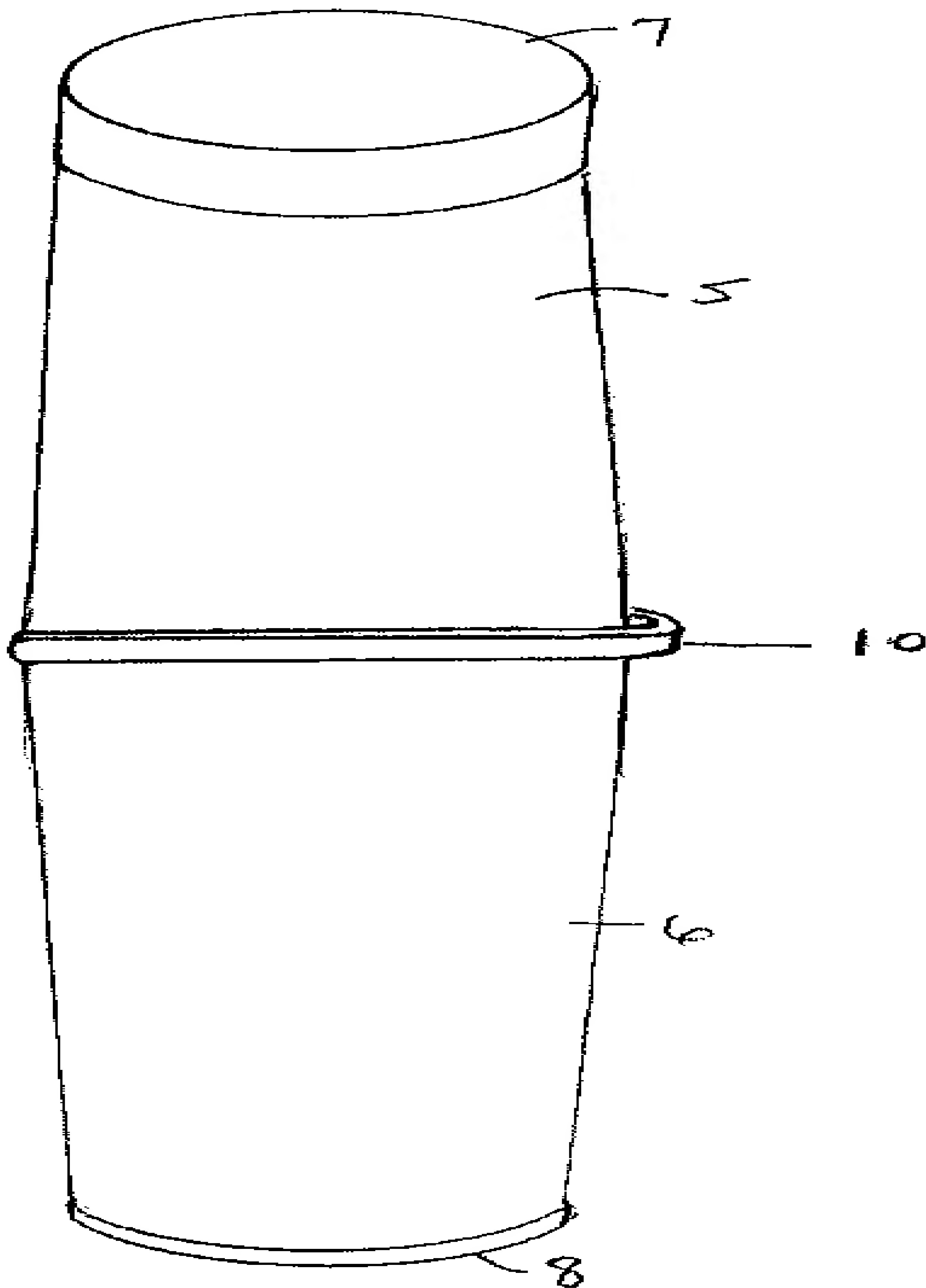


Fig. 12



DERWENT-ACC-NO: 2002-049777**DERWENT-WEEK:** 200207*COPYRIGHT 2010 DERWENT INFORMATION LTD*

TITLE: Storing and mixing container, e.
g. for hair color and developer,
has top and bottom portions with
reopenable seal between them,
reinforced by an external clamp,
or the container may be bent into
a V-shape

INVENTOR: STUNELL L G**PATENT-ASSIGNEE:** STUNELL L G[STUNI]**PRIORITY-DATA:** 2000CA-2309878 (March 7, 2000)**PATENT-FAMILY:**

PUB-NO	PUB-DATE	LANGUAGE
CA 2309878 A1	September 7, 2001	EN

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
CA 2309878A1	N/A	2000CA- 2309878	March 7, 2000

INT-CL-CURRENT:

TYPE

CIPS

IPC DATE

B65D81/32 20060101

ABSTRACTED-PUB-NO: CA 2309878 A1**BASIC-ABSTRACT:**

NOVELTY - The container comprises semi rigid tubular walls, a cap (7) or nozzle at one end through which the contents of the container are emptied defined as the top portion, and a cap (8) seal at the other end, defined as the bottom portion. A re openable seal is situated within the interior walls of the container dividing the top portion and the bottom portion of the container into two separate compartments. The interior re openable seal (10) can be reinforced by attaching an exterior wall clamp to the stand up container or the container may be bent into a V-shape position.

DESCRIPTION - Two compositions are deposited into the separate compartments and later mixed together by either unbending and squeezing the V-shaped container or by removing the exterior wall clamp and squeezing the stand up container, thereby causing the re openable seal to open and the contents to interact. The container is made of semi rigid plastic material.

USE - As a bendable tubular stand up or V-shaped container for storing and mixing two compositions which must be kept separate until being mixed together at or near the time of use. E.g. for hair color/developer, in cosmetic industry, but may

used in pharmaceutical, chemical and beverage applications.

ADVANTAGE - Saves on packaging materials, reduces number of steps required for mixing, is cost effective for customers.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the container, showing the external clamp.

upper/lower compartments (5,6)

caps (7,8)

external clamp (10)

CHOSEN-DRAWING: Dwg.7/12

TITLE-TERMS: STORAGE MIX CONTAINER HAIR
DEVELOP TOP BOTTOM PORTION REOPEN
SEAL REINFORCED EXTERNAL CLAMP
BEND SHAPE

DERWENT-CLASS: Q34

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: 2002-036807